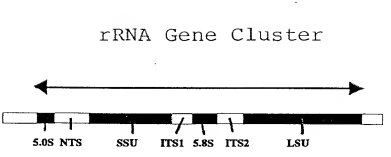



FIG. 1

1 50
AAAGTCGCAC CTTTCCCCAT AAACCCCCTC CCCACCCCCT TGGACATTGT
51 100
TCCACTTTTC ACTTGTATTG TGAAGCACCC AATGCTAGCC CATAGAACAG
101 150
TCCAGTAGTT CAATAGAGAG ACTAGTGAAC ATAGTTTATA ACATTGTCCA
151 200
AGGGGTGGAG GGGGATGCGC GAAATCGATG TGCACGTTTG GTCAAAGATG
201 250
CTCGCGAAAG CTGCACATCA ATTTCGCACA TGGGCGAAAT TGACTTGCAG
251 300
GTGGGTATAA AAGTTGATGT AGGCCATGTG GCTCGATTTC AACCATATGG
301 350
GTATGCTTCT GAGGATGGGG TGTTACAGTG GACCATATGA GGTAGGTCAT
351 400
TTGGAGATGT CACCAAAATG GTCTAAATCT GCGCATTCCA TTTAAGTGAA
401 450
TTTAAGTGAA ATTTAAGTGA ATTTTACTTA AAATTGACCT TTTTCGTTGC
451 500
GCAGATTTGG GGTGGTGATG GGTGACGCGG CGAATTTTTT AAAAAAGAGG
500 550
TATATCGCGT GCTATTTGTA TTTTTGGTAT CACCGCGTCA CCAATCACCA
551 600
TTGACGGTTT CTTTTTCGAA GTTTTTCCGG ATTATTGCAT TTTTTATATA
600 650
ATTGTGGGTG GCTGATTCTT GCGAAAGGAC TGTTGTGATG TCCGAGTTCC
651 700
CAAATTGGGA GTTTTTGGAC ATCACTCCTG ATCTGCCGGC GGCGATCAGG
700 750
ATGACTGACA TTTCGATATA TTTTGGGTAT TCGATAGCTG CCAAATCGGT
751 800
CAGCGTCGAG TATTCCGGTT TATTCGAAGG ATTCATGATA TTGCAAAATA
800 850
TCATTGATTT TCATGGGGTT TTGTATTAGT ACCCGCTCAT TGTGGGAAAG
851 900
TCGGGTGGAT TTATCTTACC CGCAAATCTA ATACAAGATT TGCATGATGC
900 950
AGCAATAGAC CAAGGTTAGT ATAGCAGTTG TATTTATACG ACTAGTTATG
951 1000
CAAACCCTTT GTGTTTTTTG TTGCGACTCT TGGCGTGAAC CGGAAGACCG
1000 1050
GACCTCGCTT TCGACTATTC ATCTTTGATG GATATGAGAT CGCAAGGGTA
1051 1100
TCGCTTCGTG CGATATTTAG TGACCATCAG AGCACGCTAC GACTTTTGAT
1100 1150
TATATCCTTG GATTTAATCG GAAGCTCGCA AGCATTGCAT TGATGCAATC

FIG. 2

ttttcaTTTT TGCTTTCACA ACCCCGCACC CCATGTACAA TGTTGCCAAC
#1
CACTAGAGTT TCAACAACAT TCGGATTTGA CAACATGTCA ACAATTCACA
#51
ACAGAAATTG ACAACATTGT CACAAATTCT CAAATTGGAC AACATTGGAC
#101
AAAAATTCAC AACATACATT GGACAACAGT GGACAACGAA CCCAAACCCG
#151
ACAACATTGT CCAGGGGGAT AGGGGGTGAA AAAGCAGTGC CGGCAAAGTC
#201
GAAAGATGTC AAGTTGGAAT GCGGCTCAAA TTCGTCATTT GTGTAAATCC
#251
GCAATTTTGC CAATGTGCAA TTTTGCAAAT GTGCAATTTT GCAAATGTGC
#301
AATTTTGCCA ATGTGCAATT TTGCAAATGC GCAATTTTGC AAATCCGCAA
#351
TTTTGCAAAT GTGCAATTTT GGAAAATCAC CAAATGAAAA TCGTCCAAGT
#401
CGAATTGGAG GCGTGGTGAC ATGGTCCCGG GATCCCCTGG TTACAGTGGA
#451
CAATATCCCA GCAATATTCG CTGTAATTTG GAGTTTCGCT GTTTTGGCAA
#501
ATTTTGAGTC TGAAAAAAAA AATTGCAAAT GCGCAAAGGG GGTGAAGGAA
#551
AAAAAAGCAC CCCCGAAGGT AAAATTCCCT TTAAGTCCCT TGCGCATTTG
#601
CAAAATTTTC AAAAATTGTT GCAAATGCGC TTTTGTTATT TGGCCGGTTC
#651
ATTGGTGTCA AAAGTTGCCT GGGGTGGTTA CACAATGCAC GGAATTGGTT
#701
GGAAGTTGTG TGATTGAAAA TTGGTCGTGT CACACAATTT TGCGCATTTG
#751
CAAAAATTCG CAAATTGGAC AAAAAAGGGT CGCGCACAGT CAAATTGCGC
#801
AAATTTCACT TTGAAGTGAG TGCGCATTTG TGGGGCAGAA ATGTGGTGAC
#851
AGCATCGTTT TTTATAATAA ATATTCTATA TTTAGTATCT TTATTATAAT
#901
TTGCTGTCAC CAATCACCAT TTTAGAATTT TTATTTTTTT ATGTTTTAGT
#951
GACCGCGGGA TTTTTTGCAA AGTACTATYG TGATGTTTGA GTTGTTTGAA
#1001
ATGGGCAATT TAGAACATCA TCAGAAATCG CTGAATAGTG ATTTTTGAGT
#1051
TTGACTGTTT GAAGTGTTTT GGGTATTCGG CAGCTGCCAA ATCGGTCAGC
#1101
GTCGAATATA ATAGCATTTT TGTGTGTATA TGATATTTAG CGATATCATT
#1151
GGAATCATGG GGTTTTGTAT TAGTACCCGC TCATTGTGGG AATGTCGGGT
#1201
GGTTCAATAT CACCTGCAAA TTTAATACAG GATTTGCATG ATGCAGCGAC
#1251
TGACCGGGGT TGGTATAATA GCTGATTATT CGGCTTATTA TGCAGACCTA
#1301
TCGTGTTAGT AGTTGCGACT CTTGGCGTGA ACCGGAAGAC CGGAACTTGA
#1351
ATTCGACTAT TTACGTCCGT AAACAGGAGA TTTCAAGAAT ATTGCACATT
#1401
TTGCGTGATA TAAACGTGAT CATCTGAGCA CGCTTCGACT CTTGGATATC
#1451
TGCTAATCAG CCGTCATCTG AGAGCTCGCA AGCATTGCAA TTGATGCAAT
#1501

FIG. 3

1 50
CGTGCCCTTT TCACGAATTC ACAGCCCCGC ACCCCATGTA CAATGTTGCC
51 100
CACCCGAAAT GCCTGCCTGC CCACCCGAAA TGCCCGAAAT GCCCGTTAGA
101 150
AAAAGTATGC GAAAAGTTCT TGTCAATTTT GACAGTGTGT GAAAAAACTG
151 200
AAAAAGTCCA CTCAACATTG CATTATGCAA TTTGCCACTC AACATTGTCC
201 250
AGGGGGATAG GGGGTGAAAA AGTATCGCAG TCCAACTGAA AAGATGCTAA
251 300
GTTGAAATGC GGCGCAAATT CATCACTTGA GTTGCGAAAA TCCCTAAAGT
301 350
CGAATTTGGC ACTCGGTGAC ATGATCGGGA ATTTCCCTGG TTACAGTGGT
351 400
CAAATCCCAG CAATTTTGGC AAAGTTTTTG AGTTTCGCAC TTTTCGCAAA
401 450
TTTCGTGTCT GAAAAAAAAA TTTCAACTTT GCGCAAAGGG GTCAAAGGGA
451 500
AAAAAAGCAC CCTCAAAAGG AAATTTCCCT TTAATCCCCT TTGAAAAAAA
500 550
TGCGCAAAGT TAAATTTGCG AAAATTTCGA TTTTCTCATA TGACCGATTA
551 600
GTTGGTGCCA GATGGTAGTC GGGATGGTTA CACGGTGCAC GGAACTCGTT
600 650
GGAAGTTCTG GAGTTACGAA TTGGTCCCGT CACCACAATT TGCGCATTTT
651 700
TGAAATTGCG CAAATTTGCG AAAAAAGCAG CGCGCAAAGT TAAATTGTGC
700 750
GAAAATTGAC TTTCAGGTCG GTGCGCAAAT TTGGGGTGAA AAAGTGGTGA
751 800
CAGCATCAGA ATTATAATAA ATAATCTATA ATCTAGTTCT TTTATTATAA
800 850
TTAGCTGTCA CCAATCACCA TTTGAGATTT TTTATTTTTT TATGTTTTAG
851 900
TGACCGCGGT ATTTTTTCCA GAGTACTATC GTGATGTCTG AGTTGTCTAA
900 950
AACGGCAATT TCAGAACATT ACCAGAAAAC ACTGAATAGT GGTTTCTGAG
951 1000
TCTGACTGTT TGAAGTGTTT TGGGTATTCG GCAGCTGCCA ATTCGGTCAG
1000 1050
GGTTGAATAT ACTAACATTT CTGTGTGTAT ATGGTATTTA GCGATATCAT
1051 1100
TGGAATCATG GGGTTTTGTA TTAGTACCCG CTCATTGTGG GAAAGTCGGG
1100 1150
TGGTTCAATA TCACCTGCAA ATTTAATACA GGATTTGCAT GATGCAGCGA
1151 1200
CTGACCGGGG TTAGTATAAT AGCTGATTAT TCGGCTTATT ATGCAGACCT
1200 1250
ATCGTGTTAG TAGTTGCGAC TCTTGGCGTG AACCGGAAGA CCGGAACTTG
1251 1300
ATTTCGACTA TTTACGTCCG TAACACGTCC GTAAACAGGA GATTTCAAGA
1300 1350
ATATTGCACA TTTTGTGTGA TATAATCGTG ATCATCTGAG CACGCTTCGA
1351 1400
CTCTTGAATA TTTGTTAAAC AACCGATATT CGGGAGCTCG CAAGCATTGC
1400 1450
AATTGATGCA ATC

FIG. 4

| Primer | Sequence | Target |
|---|---|---|
| 300 F | 5'-CACTTGTATTGTGAAGCACCC-3' | |
| 300 R | 5'-TTG GTG ACA TCT CCA AAT GAC-3' | *Perkinsus marinus* |
| 500 F | 5'-ATGCTAGCCCATAGAACAGT-3' | |
| 500 R | 5'-ATGCTAGCCCACATCACAGC-3' | |
| NTS7 | 5'-AAGTCGAATTGGAGGCGTGGTGAC-3' | |
| NTS6 | 5'-ATTGTGTAACCACCCCAGGC-3' | *Perkinsus* andrewsi |
| PM5 | 5'-ATGCTAGCCC ATAGAACAGT-3' | *P. marinus* type I |
| PM7 | 5'-CAT CTC CAA ATG ACC TAC CT-3' | *P. marinus* type I |
| PM6 | 5'-ATGCTAGCCC ACATCACAGC-3' | *P. marinus* type II |
| PM8 | 5"-CAT CTC CAA ATG ACC TAC CA-3' | *P. marinus* type II |

**FIG. 5**

FIG. 6

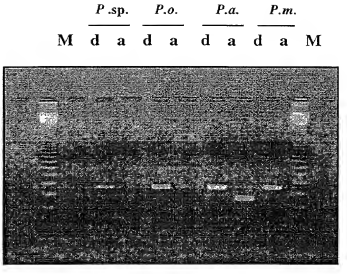


FIG. 7

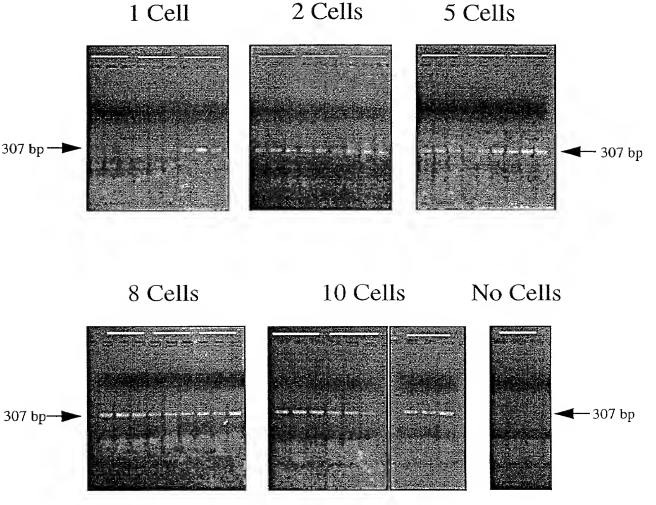

1 Cell
2 Cells
5 Cells
307 bp
307 bp
8 Cells
10 Cells
No Cells
307 bp
307 bp

FIG. 8

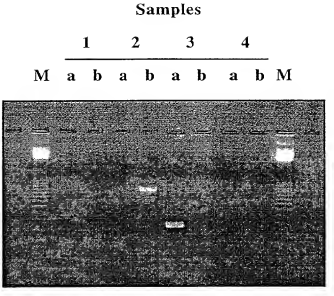


FIG. 9

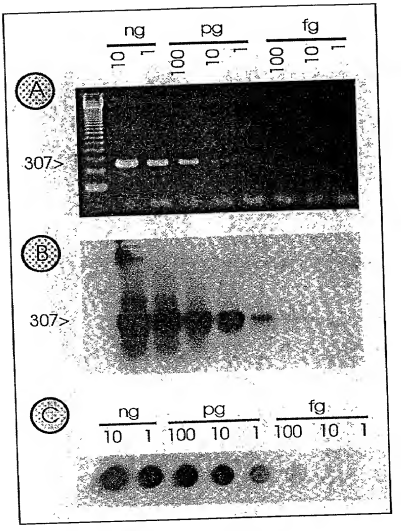

ng
pg
fg
10
1
100
10
1
100
10
1
A
307>
B
307>
C
ng
pg
fg
10
1
100
10
1
100
10
1

FIG. 10

```
          1                                                   50
Type-I    CACTTGTATT GTGAAGCACC CAATGCTAGC CCATAGAACA GTCCAGTAGT
Type-II   CACTTGTATT GTGAAGCACC CAATGCTAGC CCACATCACA GCCCAGTAGT

          51                                                  100
Type-I    TCAATAGAGA GACTAGTGAA CATAGTTTAT AACATTGTCC AAGGGGTGGA
Type-II   TCAATAGAGA GACGAGTGAA CATAGTTTAT AACATTGTCC AAGGGGTGGA

          101                                                 150
Type-I    GGGGGATGCG CGAAATCGAT GTGCACGTTT GGTCAAAGAT GCTCGCGAAA
Type-II   GGGGGATGCG CGAAATCGAT GTGCACGTTT GGTCAAAGAT GCTCGCGAAA

          151                                                 200
Type-I    GCTGCACATC AATTTCGCAC ATGGGCGAAA TTGACTTGCA GGTGGGTATA
Type-II   GCTGCACATC AATTTCGCAC ATGGGCGAAA TTGACTTGCA GGTGGGTATA

          201                                                 250
 Type-I   AAAGTTGATG TAGGCCATGT GGCTCGATTT CAACCATATG GGTATGCTTC
Type-II   AAAGTTGATG TAGGCCATGT GGCTCGATTT CAACCATATG GGTATGCTTC

          251                                                 300
Type-I    TGAGGATGGG GTGTTACAGT GGACCATATG AGGTAGGTCA TTTGGAGATG
Type-II   TGAGGATGGG GTGTTACAGT GGACCATATG TGGTAGGTCA TTTGGAGATG

          301
Type-I    TCACCAA
Type-II   TCACCAA
```

FIG. 11

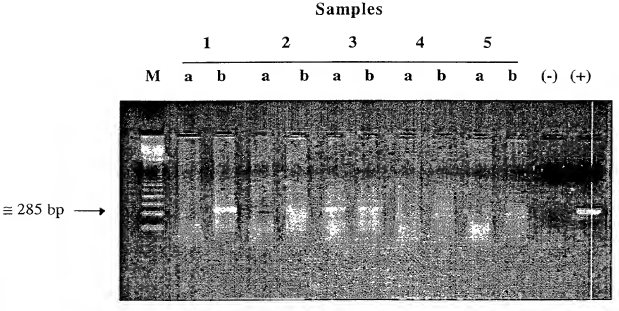

Samples
1
2
3
4
5
M
a
b
a
b
a
b
a
b
a
b
(-)
(+)
≡ 285 bp

FIG. 12

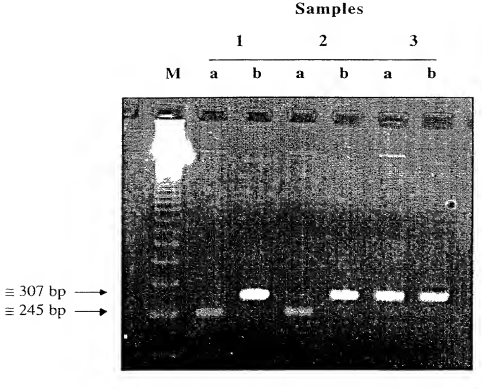

Samples
1
2
3
M
a
b
a
b
a
b
≡ 307 bp
≡ 245 bp

FIG. 13

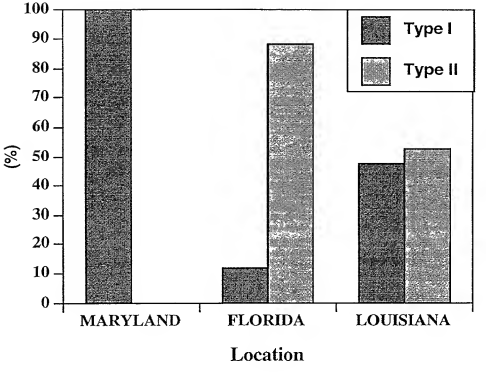

100
90
80
70
60
50
40
30
20
10
0
(%)
Type I
Type II
MARYLAND
FLORIDA
LOUISIANA
Location

FIG. 14

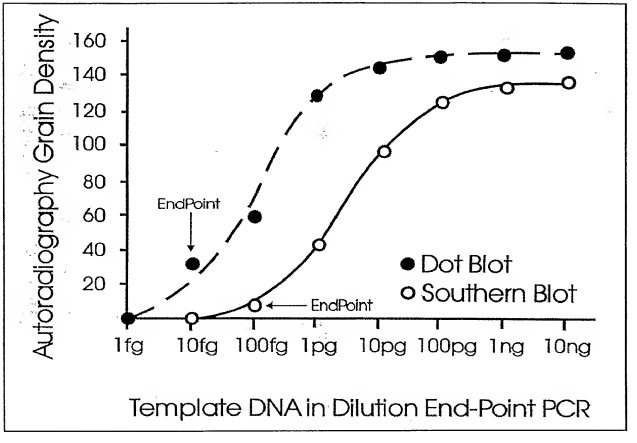

Autoradiography Grain Density
160
140
120
100
80
60
40
20
EndPoint
EndPoint
Dot Blot
Southern Blot
1fg
10fg
100fg
1pg
10pg
100pg
1ng
10ng
Template DNA in Dilution End-Point PCR

FIG. 15

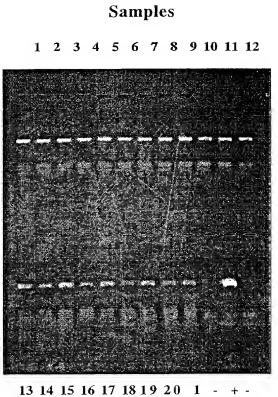
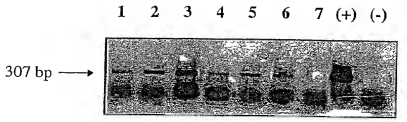


FIG. 16



```
                .TCTTTTTAAA TCGCACTCAT GGCTTGTGCA TGCGTGCAAG CCCCCGGAGC
  #1            ..................................................

 >P. atlanticus.CCCCTGGACA ATGTTATCCC AGCTCAACAA CGAGCAACAG TGCTATGGCA
  #51           ..................................................

 >P. atlanticus.AGTAGTCCAC TAGAGAGCCA AGTCGACAAT CTCTACAACA TTGTCCAAGG
  #101          ..................................................

 >P. atlanticus.GGGAAAGGGG GGCGCGCGAA GTTGACCTGC AGCAGAGGGA AAAGATGCTG
  #151          ..................................................

 >P. atlanticus.AGTTTTGCTG CACCCCAACT TTGCGCACTT GGCGAAGTTG ACTTGCAGGC
  #201          ..................................................

 >P. atlanticus.GAGGGTAAAA GATGCTATGG TTGGTTGCGG ACCAAGTTCG CCGTGTGGGT
 >PA690F-Text                ATGCTATGG TTGGTTGCGG ACC
  #251          ..................................................

 >P. atlanticus.CATCATTATC GAGGTCTGTG GTGACGATGG ACTAGTTTTT AGGGATTTTC
  #301          ..................................................

 >P. atlanticus.CGGAGGTGTC ACCACGGACC CCCCAACTTT GCGCACGGGG GGTACTCAAT
  #351          ..................................................

 >P. atlanticus.TTTAAGTGAA ATTTAAGTAA AATTTACTTA AAATTCACGT TTTTGGGTGC
  #401          ..................................................

 >P. atlanticus.GCAAAGTTGA GGTGGTGACT GGTGACACGA AAATTTTAAA AAAGAGAGAT
  #451          ..................................................

 >P. atlanticus.ATTAAAAAAA TATTTATATT TTCTGTGTCA CCGTGTCACC AGTCACCACA
  #501          ..................................................

 >P. atlanticus.GGGCGTAATT TTCCGGGAAA TTTTCAGATT TTCCGGAAAA ATTGCATTTT
  #551          ..................................................

 >P. atlanticus.GGGGTAAATA GTGTCCGTCA GAATTTTGCC AAAGGACTGT CGTGATGTCC
  #601          ..................................................

 >P. atlanticus.GAGTTCCCAA ATTGAGGGTT TTTGGACATC GCTCTGAAAT CGCTAACGGC
  #651          ..................................................

 >P. atlanticus.GTTTCAGATT TCCGACTTTT CGACATATTC TGGGTATTTG ATAGCTGCCA
  #701          ..................................................

 >P. atlanticus.AATCGGTCAG CGTCGAATAT TCCAATATTT CGAAGGATAT ATGATATCGC
  #751          ..................................................

 >P. atlanticus.GAGATATCAT TGGATTTCAT GGGGTTTTGT ATTAGTACCC GCTCATTGTG
 >PER1-Text                                      TAGTACCC GCTCATTGTG
  #801          ..................................................

 >P. atlanticus.GGAAAGTCGG GTGAATTTAT TCAACCCGCA AATCTAATAC AAGATTTGCA
 >PER1-Text     G
  #851          ..................................................

 >P. atlanticus.TGATGCAGCG ACTGACCGGG GTGAGTGTAG CAGCTGTTCT ACGGCTTGCT
 <PA690R-Text                                     GCTGTTCT ACGGCTTGCT
  #901          ..................................................

 >P. atlanticus.ACGCAGACCT ATCGTGTTAG TAGTTGCGAC TCTTGGCGTG AACCGGAAGA
 <PA690R-Text   AC
  #951          ..................................................

 >P. atlanticus.CCGGACCTCG CTTTCGACTA TTCATTCCGA TGAATATGAG ATTGCAAGGG
  #1001         ..................................................

 >P. atlanticus.TATCGCTTCG TGCGATATTT AGTGATCATC AGAGCACGCT ACGACTTCAG
  #1051         ..................................................

 >P. atlanticus.TATATCCTCG GATACACAGA AGCTCGCAAG CATTGCATGA TGCAATC
 <PER2-Text                          AGCTCGCAAG CATTGCA
  #1101         ..................................................
```

**FIG. 17**

```
>P. andrewsi-S.ACCTGGTTGA TCCTGCCAGT AGTCATATGC TTGTCTCAAA GATTAAGCCA
 #1               ..................................................

>P. andrewsi-S.TGCATGTCTA AGTATAAGCT TTAAACGGCG AAACTGCGAA TGGCTCATTA
 #51              ..................................................

>P. andrewsi-S.AAACAGTTAT AGTTTATTTG GTGATCGATT ACTATTTGGA TAACCGTAGT
 #101             ..................................................

>P. andrewsi-S.AATTCTAGAG CTAATACATG CGTCAAGGCC CGACTTCGGA AGGGCTGCGT
 #151             ..................................................

>P. andrewsi-S.TTATTAGATA CAGAACCAAC CTAGCTCCGC CTAGTCCTTG TTGGTGATTC
 #201             ..................................................

>P. andrewsi-S.ATAATAACCC GGCGAATCGC ACGGCTTGTC CGGCGATGGA CCATTCAAGT
 #251             ..................................................

>P. andrewsi-S.TTCTGACCTA TCAGCTATGG ACGGTAGGGT ATTGGCCTAC CGTGGCGTTG
 #301             ..................................................

>P. andrewsi-S.ACGGGTAACG GGGAATTAGG GTTCGATTCC GGAGAGGGAG CCTGAGAAAC
 #351             ..................................................

>P. andrewsi-S.GACTACCACA TCTAAGGAAG GCAACAGGCG CGCAAATTAC CCAATCCTGA
 #401             ..................................................

>P. andrewsi-S.TACAGGGAGG TAGTGACAAG AAATAACAAT ACAGGGCAAT TCTGTCTTGT
 #451             ..................................................

>P. andrewsi-S.AATTGGAATG AGTAGATTTT AAATCTCTTT ACGAGTATCA ATTGGAGGGC
 #501             ..................................................

>P. andrewsi-S.AAGTCTGGTG CCAGCAGCCG CGGTAATTCC AGCTCCAATA GCGTATATTA
 #551             ..................................................

>P. andrewsi-S.AAGTTGTTGC GGTTAAAAAG CTCGTAGTTG GATTTCTGCC TTGGGCGACC
>SSU3F-Text                          AGTTG GATTTCTGCC TTGGGCG
 #601             ..................................................

>P. andrewsi-S.GGTCCACCTT TCCTACGGGT TAGGTTGGTA CCAGGTTTGA CCTTGGCTTT
 #651             ..................................................

>P. andrewsi-S.TTCTTGGGAT TCGTGCTCAC GCACTTAACT GTGCGCTGAC CGTGTTCCAA
 #701             ..................................................

>P. andrewsi-S.GACTTTTACT TTGAGGAAAT TAGAGTGTTT CAAGCAGGCT TATGCCGTGA
 #751             ..................................................
>P. andrewsi-S.ATACATTAGC ATGGAATAAT AGGATATGAC TTTGGTCATA TTTTGTTGGT
 #801             ..................................................

>P. andrewsi-S.TTCTAGGACT GAAGTAATGA TTAATAGGGA CAGTCGGGGG CATTCGTATT
 #851             ..................................................

>P. andrewsi-S.TAACTGTCAG AGGTGAAATT CTTGGATTTG TTAAAGACGA ACTACTGCGA
 #901             ..................................................
```

**FIG.18A**

```
>P. andrewsi-S.AAGCATTTGC CAAGGATGTT TTCATTGATC AAGAACGAAA GTTAGGGGAT
 #951          ..................................................

>P. andrewsi-S.CGAAGACGAT CAGATACCGT CCTAGTCTTA ACCATAAACT ATGCCGACTA
 #1001         ..................................................

>P. andrewsi-S.GGGATTGGGA GTCGTTAATT TTAGACGCTC TCAGCACCTC GTGAGAAATC
 #1051         ..................................................

>P. andrewsi-S.AAAGTCTTTG GGTTCCGGGG GGAGTATGGT CGCAAGGCTG AAACTTAAAG
 #1101         ..................................................

>P. andrewsi-S.GAATTGACGG AAGGGCACCA CCAGGAGTGG AGCCTGCGGC TTAATTTGAT
 #1151         ..................................................

>P. andrewsi-S.TCAACACGGG AAAACTCACC AGGTCCAGAC ATAGGAAGGA TTGACAGATT
>SSU4F-Text                    ACC AGGTCCAGAC ATAGGAAGG
 #1201         ..................................................

>P. andrewsi-S.GATAGCTCTT TCTTGATTCT ATGGGTGGTG GTGCATGGCC GTTCTTAGTT
 #1251         ..................................................

>P. andrewsi-S.GGTGGAGTGA TTTGTCTGGT TAATTCCGTT AACGAACGAG ACCTTAACCT
 #1301         ..................................................

>P. andrewsi-S.GCTAAATAGT TGCGTGAAAT CTTGTATTTC ACCGCTACTT CTTAGAGGGA
 #1351         ..................................................

>P. andrewsi-S.CTTTGTGTGT TTAACACAAG GAAGCTTGAG GCAATAACAG GTCTGTGATG
 #1401         ..................................................

>P. andrewsi-S.CCCTTAGATG TTCTGGGCTG CACGCGCGCT ACACTGACAC GATCAACGAG
 #1451         ..................................................

>P. andrewsi-S.TATTTCCTTG CCCGGTAGGG TTAGGGTAAT CTTTTGAAAT CGTGTCGTGC
 #1501         ..................................................

>P. andrewsi-S.TAGGGATAGA CGATTGCAAT TATTCGTCTT CAACGAGGAA TTCCTAGTAA
 #1551         ..................................................

>P. andrewsi-S.ATGCAAGTCA TCAGCTTGCG TTGATTACGT CCCTGCCCTT TGTACACACC
 #1601         ..................................................

>P. andrewsi-S.GCCCGTCGCT CCTACCGATT GAGTGATCCG GTGAGCTGTC CGGACTGCGA
 #1651         ..................................................

>P. andrewsi-S.TTAGTTCAGT TTCTGTTCTT TTCGCGGGAA GTTCTGCAAA CCTTATCACT
 #1701         ..................................................

>P. andrewsi-S.TAGAGGAAGG AGAAGTCGTA ACAAGGTTTC CGTAGGTGAA CCTGCAGAAG
#1751
  ..........
>P. andrewsi-S.GATCATTC
```

**FIG. 18B**

ACACCGATTC ATTCTCTGAG AAACCAGCGG TCTCTGTAAA AGGAGATGGG
#1
ATCTCCGCTT TGTTTAGATC CCCACACCTG ACCGCTTTAA CGGGCCGGGT
#51
AGGTGCATAA CTTCTATGAA CCAATTGTAC TAGTCTAAAG TATCCAATAT
#101
CCTTTTGGAT TTTGGTATTT CAAAACGAAA TTCCAAACTC TCAACGATGG
#151
ATGCCTCGGC TCGAGAATCG ATGAAGGACG CAGCGAAGTG CGATAAGCAC
#201
TGCGATTTGC AGAATTCCGT GAACCAGTAG AAATCTCAAC GCATACTGCA
#251
CAAAGGGGAT TTATCCTCTT TGTACATACA TATCAGTGTC GCTCTTCTTC
#301
CCGATACAAA CATTTTGTTG ATTTACAATC AACATTATGC TTTGTATCCC
#351
GCTTGGATTC CTTTATTGGG ATCCGCTGTG TGCGCTTGCT GACACAGGCG
#401
CATTAATTTG CAAGGCTATA ATACTACTGT ACTGTAGCCC CTTCGCAAGA
#451
AGGACTGCGC TAGTGAGTAT CTTTGGATGC TCGCGAACTC GACTGTGTTG
#501
TGGTTGATTC CGTGTTCCTC GATCACGCGA TTCATCGCTT CAACGCATTA
#551
TGTCAAATTT GATGAATGCA GAGAGTTGTT TATGAATTAC GCGATCGCTT
#601
TGGTCTCAGA ATCGTTACTA TAGCACGCTT GTCGGTTTGC AACCTGGCAA
#651
TATGTCATCA TT
#701

FIG. 19

| | | Primers to claim | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Perkinsus* species | PCR | Name | Forward Primer (5'-3') | Position[1] | Name | Reverse Primer (5'-3') | Position[1] | Amplicon Size (bp) | Publication |
| *Perkinsus marinus* | Species specific | 300F | CAC TTG TAT TGT GAA GCA CCC | 60-80 | 300R | TTG GTG ACA TCT CCA AAT GAC | 346-366 | 307 | Marsh et al. J. Parasitol. 1995 81(4):577-83. J. Parasitol. 1999 85(4):650-6. |
| *Perkinsus atlanticus* | Species specific | PA690F | ATG CTA TGG TTG GTT GCG GAC C | 262-283 | PA690R | GTA GCA AGC CGT AGA ACA GC | 933-952 | 691 | Robledo et al. J. Parasitol. 2000 86(5):972-8 |
| *Perkinsus andrewsi*[3] | Species specific | NTS7 | AAG TCG AAT TGG AGG CGT GGT GAC | 447-470 | NTS6 | ATT GTG TAA CCA CCC CAG GC | 717-736 | 290 | Coss et al. J. Euk. Microbiol. (In Press) |
| *Perkinsus marinus* | Generic | PER1 | TAG TAC CCG CTC AT(TC) GTG G | 827-845 | PER2 | TGC AAT GCT TGC GAG CT | 1123-1139 | 313 | Coss et al. J. Parasitol. (Submitted) |
| *Perkinsus atlanticus* | Generic | PER1 | TAG TAC CCG CTC ATT GTG G | 833-851 | PER2 | TGC AAT GCT TGC GAG CT | 1121-1137 | 305 | Coss et al. J. Parasitol. (Submitted) |
| *Perkinsus andrewsi* | Generic | PER1 | TAG TAC CCG CTC ATT GTG G | 1221-1239 | PER2 | TGC AAT GCT TGC GAG CT | 1523-1539 | 319 | Coss et al. J. Parasitol. (Submitted) |

[1]Relative to the NTS sequence

[3]*Perkinsus* sp. (*Macoma balthica*)

**FIG. 20**

| | | Primers to claim | | | | | | |
|---|---|---|---|---|---|---|---|---|
| *Perkinsus* species | PCR | Name | Forward Primer (5'-3') | Position | Name | Forward Primer (5'-3') | Position[1] | Publication |
| *Perkinsus andrewsi* | Sequencing | SSU3F | AGT TGG ATT TCT GCC TTG GGC G | 626-647 | SSU4F | ACC AGG TCC AGA CAT AGG AAG G | 1218-1239 | Coss et al. J. Euk. Microbiol. (In Press) |

**FIG. 21**